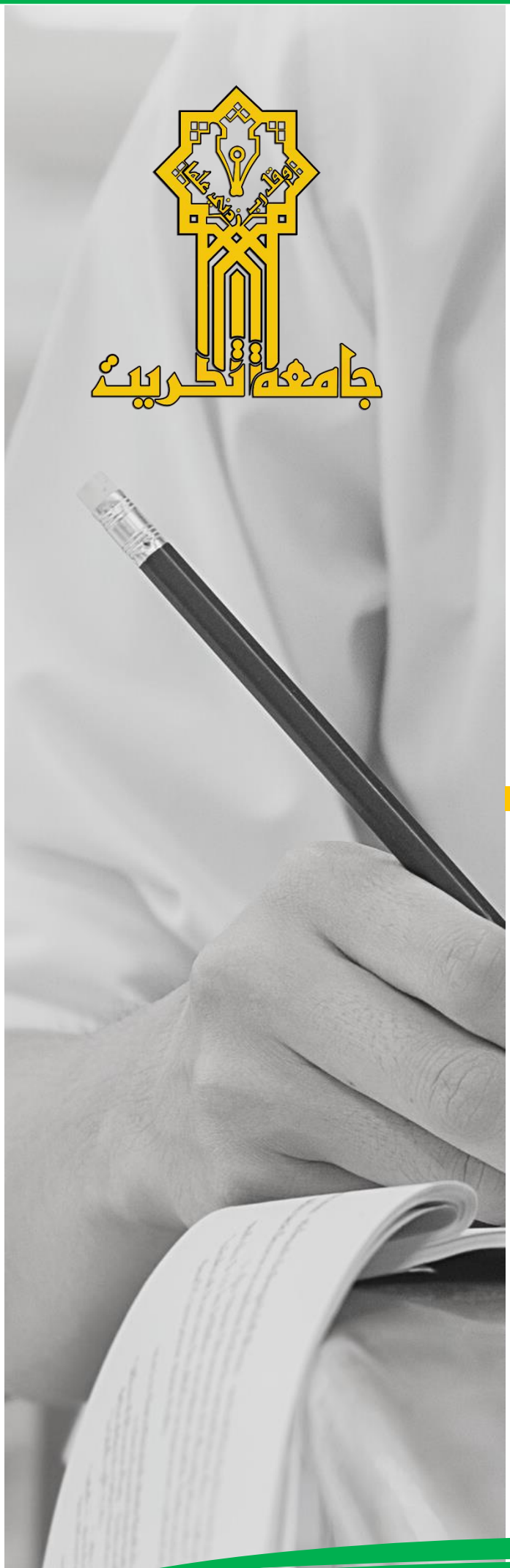


Tikrit University
College of Veterinary Medicine

# Internal Parasites

Subject name: Poultry Diseases

Subject year:2024

Lecturer name: Nawar Ali Jasim

Academic Email:pdvet10@tu.edu.iq

SCAN ME
Lecturers link

# 2 Internal Parasites:-

## 1 Nematodes:-

### A) Nematode of the upper Digestive tract:-

**1-Capillaria annulata.**

**2-Ascaridia galli.**

**3-Capillaria obsignata.**

**4-Heterakis gallinarium .**

### B) Nematode of respiratory tract.

***Syngamus trachea.**

## 2 Cestodes:-

**1-Davainea proglottina.**

**2-Raillietina spp.**

# Internal Parasites:-

## 1 Nematode:-

**There are three main genera (Capillaria spp, Heterakis and Ascaridia).**

## A) Nematode of the upper Digestive tract:-

**(which can distinguished by gross differences in size).**

### 1-Capillaria annulata.

***Susceptible host:-**

Chicken, turkey, goose, pheasant and quail.

***Location:-**

It is found in the mucosa of the esophagus and the crop.

***Mophology:-**

Cylindrical, cuticular **swelling at the back of the head.**

***Life cycle:- two species of earthworms.**

***Pathogenicity:-**

1-Thickening of mucosa of the crop and enlargement of glands.

2-Inflammation of the crop and esophageal walls.

## 2-Ascaridia galli

### *Susceptible host:-

Chicken, turkey, doves, duck and geeze.

### *Location:-

Lumen of intestine, crop, esophagus, gizzard and in **oviduct**, **egg.**

### *Mophology:-

The worms are large,thick,yellowish **white** color, their head has three large lips.

### *Life cycle:-

It has direct life cycle (one earth worm).

### *Pathogenicity:-

1-Loss of weight, **retarded growth**, in severe infections, **intestinal blockage** can occur.

2-Chicken infected with a large number of this Ascardia suffer from **loss** of **Blood**.

## 3-Capillaria obsignata

***Susceptible host:-**

Chicken, turkey, Pigeon, quail.

***Location:-**

Small intestine.

***Mophology:-**

It is **hairlike.**

***Pathogenicity:-**

1-Birds heavily infected, suffer **emaciation**, diarrhea, **hemorrhagic enteritis**.

2-Lowered feed efficiency, fluid and metabolite losses, and **sometimes death**.

3-In other cases, infections of 100-1000 worms cause no weight changes.

## 4-Heterakis gallinarium

***Susceptible host:-**

Chicken, turkey, duck, geese and pheasant.

***Location:-**

Larvae and adult inhabit the ceci.

***Mophology:-**

The adult worms are **small** and **white** in **color**, the mouth is surrounded by three small, equal-sized lips.

*The chief importance of the cecal worm lies in its role as a **carrier of the blackhead organism Histomonas meleagridis.**

## *Pathogenicity:-

**1-**The **ceca** show marked **inflammation** and thickening of the walls.

2-In heavy infections, **nodules form** in the mucosa and submucosa.

3-Hepatic granulomas.

## B) Nematode of respiratory tract.

### Syngamus trachea

## *Susceptible host:-

Chicken, turkey, pheasant and quail.

## *Location:-

In trachea, bronchi and bronchioles.

## *Mophology:-

*S. trachea* are called **"redworms**" because of their prominent color, **"forked worms"** because the male and female are always locked in copulation to form a "Y"and **"gapeworms"** because birds tend to gasp or "gape" with heavy infection.

## *Pathogenicity:-

**1-Young birds** are the most seriously affected by gapeworms.

2-The rapidly growing worms soon **obstruct** the lumen of the trachea and cause the birds to **suffocate**.

3-The trachea of infected birds becomes irritated with inflamed mucous membranes, resulting in **coughing**.

4-These lesions or nodules result from an inflammatory reaction at the site of permanent **attachment of the male worms.**

## 2 Cestodes:-

**1-** Most birds are hosts to some species of cestodes or tapeworms (phylum Platyhelminthes/class Cestoda).

**2-**More than **1400 species** of tapeworms have been described from **wild** and **domestic birds.**

**3-** These parasites are found more frequently in **warmer seasons**, when intermediate hosts are abundant (increase).

**4-** Many species of tapeworms are now considered **rare** in intensive poultry-rearing regions because the birds do **not come in contact** with **intermediate hosts**.

**5- Beetles** and **houseflies** inhabiting poultry houses still act as intermediate hosts for the 2 large chicken tapeworms known only by the scientific names ***Raillietina cesticillus*** and *Choanotaenia infundibulum.*

**6-** Some infections of the **larger tapeworms** may appear to **block** completely the **intestine** of an infected bird, but **mortality** from cestodiasis or long-term effects are **rare.**

**7-** Tapeworms or cestodes are flattened, ribbon shaped, usually segmented worms.

**8-** The term **proglottid** is used to describe these individual segments.

**9- One to several gravid proglottids** are shed daily from the posterior end of the worm.

**10-** Each proglottid contains one or more sets of reproductive organs, which may become crowded with a **mass of eggs** as the maturing proglottid becomes a **gravid proglottid.**

**11-** Tapeworms are characterized by complete **absence** of a **digestive tract** and obtain their nourishment by **absorption from the gut contents** of the host.

**12-** Although the duodenum, jejunum, or ileum is the usual site for attachment, 1 species **(*Hymenolepis megalops*)** from **ducks** is found in the **cloaca** or **bursa of Fabricius.**

**13- Birds** become infected by **eating an intermediate host**, thus allowing the **larval stage** of the tapeworm access to **the intestine**. This larval tapeworm is known as a **cysticercoid.**

**14-** The **intermediate host** may be an insect, crustacean, earthworm, slug, snail, or leech depending upon the species of tapeworm.

## 1-Davainea proglottina.

### *Diagnostic Characteristics:-

**1-**This **microscopic tapeworm** may be recognized in the **duodenal** mucosa and gravid proglottids lie on above the **villi of intestine**.

**2-Mature worms** measure up to **4 mm long**; never with more than **9 proglottids**; suckers are armed with **3–6 rows of hooks**.

### *Pathogenicity:-

**1-**This parasite is one of the **more harmful** species in **young birds**.

**2-**It cause reduction in growth and **emaciation**, slow movements, **breathing difficulties.**

**3-**The gross lesion, there is thickened mucosal membranes that produce **hemorrhage** and fetid mucus.

**4-leg weakness**, **paralysis**, and **death**.

## 2-Raillietina spp

### *Diagnostic Characteristics:-

The parasite **large tapeworms** measuring between **(15-34 cm) long** and **(3-4mm) wide**, embeds in the mucosa of duodenum or jejunum.

### *Pathogenicity:-

**A) Raillietina cesticillus** cause **emaciation**, **inflammation of villi**, **reduced growth rate.**

**B) Raillietina echinobothrida**:-

**1-*R. echinobothrida*** is usually listed as one of the **most pathogenic tapeworms**, because its presence has often been associated with **nodular disease** of chickens.

**2-**The condition was associated with **catarrhal hyperplastic enteritis** as well as lymphocytic, polymorphonuclear, and eosinophilic infiltration.

### *Treatment of Internal Parasites:-

## 1-Ascaridia galli.

***The treatment by:-**

**1-Piperazine salts** at dose levels that ranged from (50 to 400 mg/kg bw.) were tested, and very little efficacy was observed in either chickens or turkeys.

**2-Fenbendazole.**

**3-Oxfendazole** at dose (3.5mg/kg) of B.W for ascaid control.

**4-Tetramisole (40 mg/kg) of B.W.**

## 2-Capillaria obsignata.

***The treatment by:-**

**1- Fenbendazole.**

**2-Albendazole at dose (20 mg/kg) of B.W.**

**3- Tetramisole (40 mg/kg) of B.W.**

## 3-Heterakis gallinarium.

***The treatment by:-**

**1-Fenbendazole** had 100% efficacy in turkeys.

**2- Albendazole at dose (5-20 mg/kg) of B.W.**

**3- Tetramisole (40 mg/kg) of B.W.**

**4-Levamisole 30mg/kg of B.W.** in drinking water.

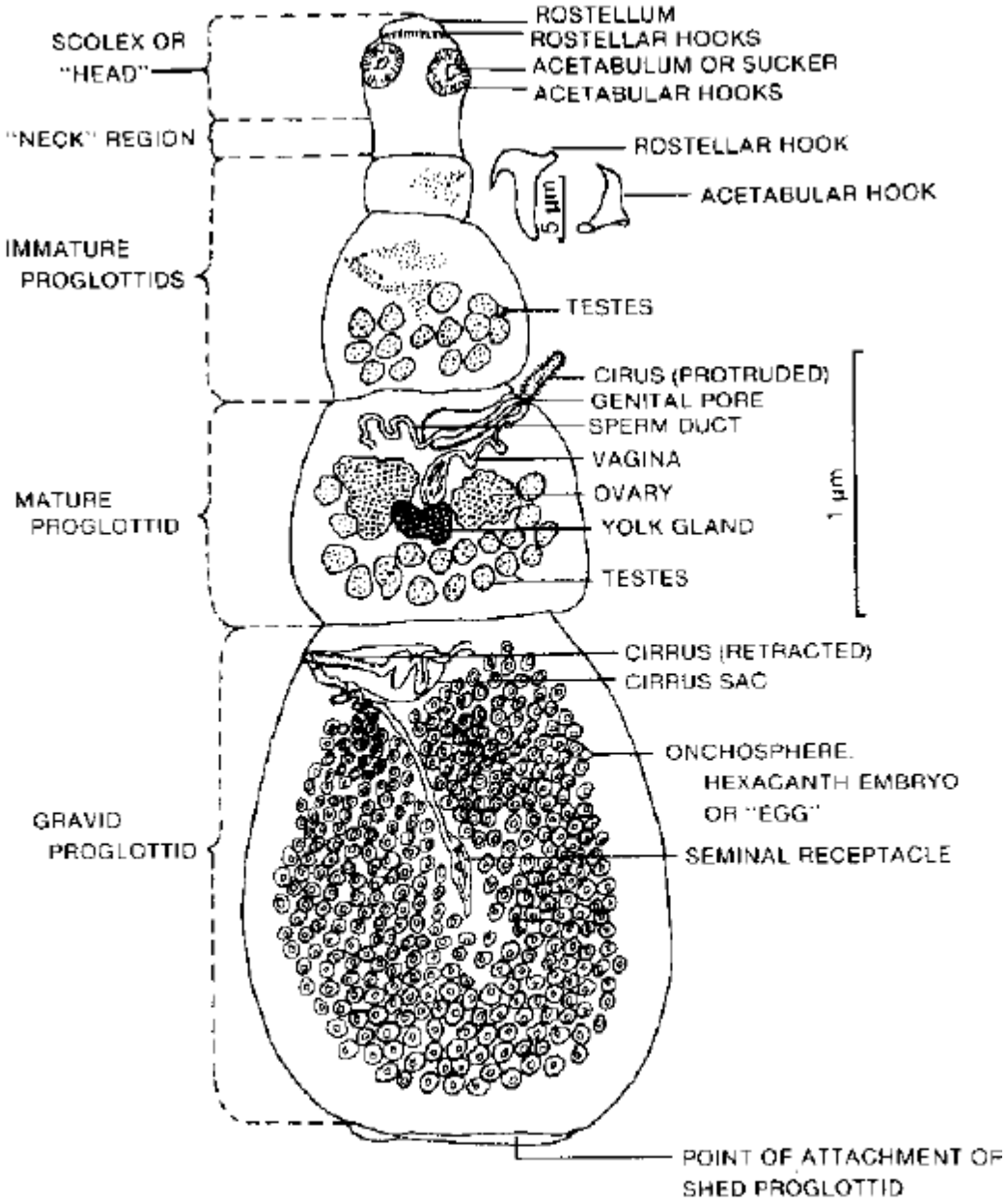
## 4-Syngamus trachea (Gape):-

**1-Thiobendazole 0.5%.**

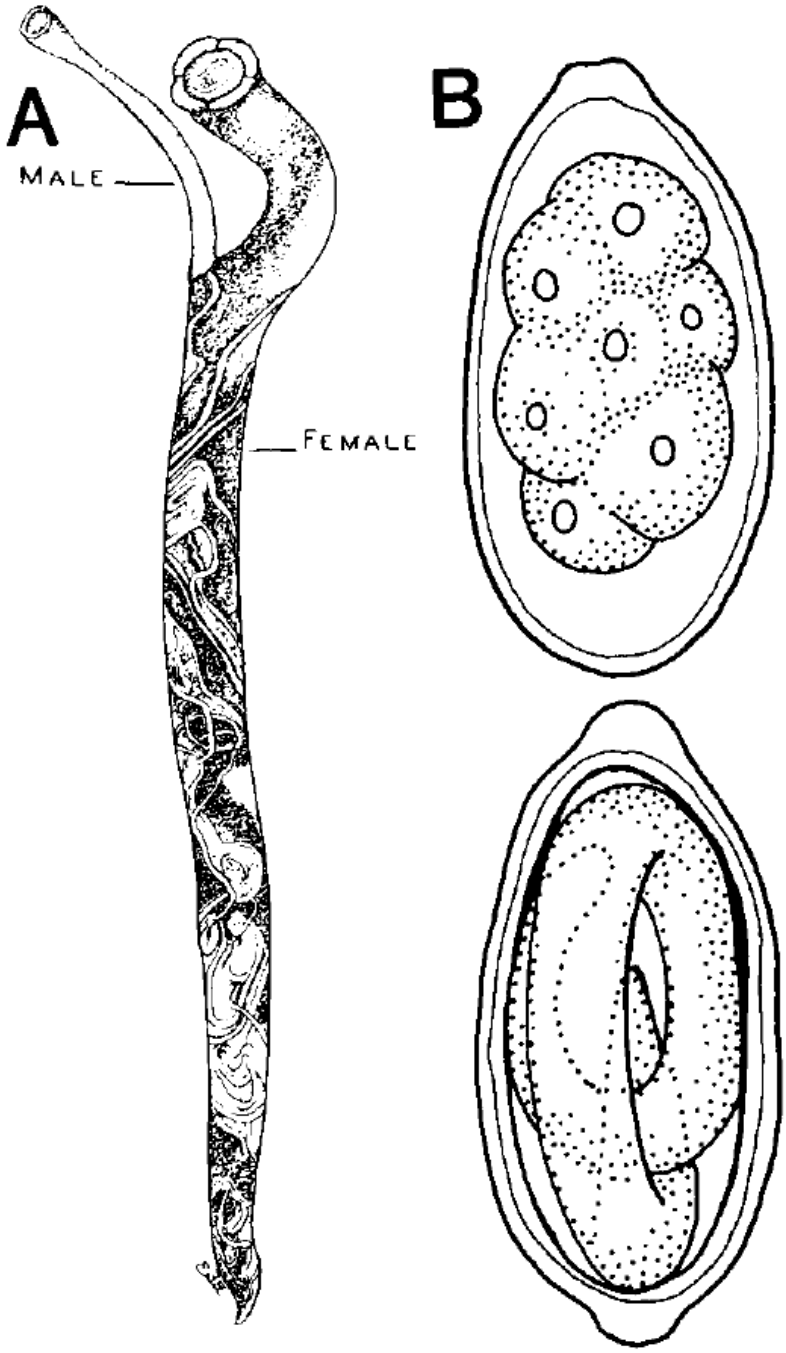
**2-Mebendazole.**

**3- Levamisole** at a dietary level of 0.04% for (2) days or in the drinking water with concentration of (2g/gal) for 1day each month.

**4-Fenbendazole** at **20mg/kg** for (3-4days) is also effective.




**27.33.** Adult tapeworm (*Davainea proglottina*). Although readily seen with the naked eye, this species has been called a "microscopic tapeworm," because it is small and often overlooked.




**27.25.** *Syngamus trachea*. A. Male and female worms. (After Wehr) B. Egg.

Referens:

1-Saif, Y. M. (2009). *Diseases of poultry*. Twelfth edition. Iowa. Blackwell.2009. 291-309.